

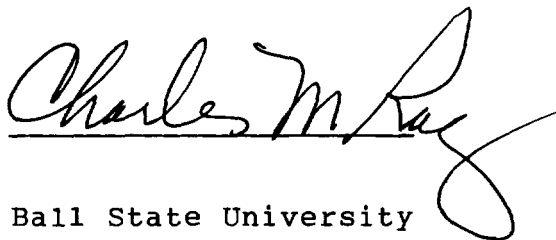
Experiences With Computer Supported Collaboration

An Honors Thesis (HONRS 499)

by

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A handwritten signature in cursive script, reading "Charles M. Ray", is written over a horizontal line. The signature is fluid and extends to the right of the line.

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Abstract

This project contains a description of computer software designed for electronic collaboration and different types and applications of it. Also included are the obstacles to learning it, the results of a trial session using the software, and recommendations for teaching others to use the software.

Acknowledgements

Thanks to Dr. Brown and her class for participating in the trial session. A special thank you to Dr. Ray for his help and guidance on this project. Without it, I would not have been able to complete my honors work.

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Attending meetings is a way of life for many people. Yet they feel it is largely an unproductive activity. LaPlante(45) cites a study by the University of Southern California which gives some facts about the average meeting. It lasts one and a half hours with only two hours of notification prior to the meeting. No written agenda exists and the stated purpose is achieved only half the time. Some participants feel that as much as 25 percent of the time is wasted discussing irrelevant issues. One third of meeting goers feel compelled to agree with issues they really do not support. The same proportion see their influence as insignificant. Over half of the typical upper level manager's day is spent in meetings at a cost of \$320 per hour.

Problem

The problem of this Honors Thesis is a study of computer supported collaboration. It includes a review of the literature, the design of an experimental collaboration session, and evaluation of user reactions to the technology.

Method

Based on a review of the literature about computer supported collaboration, a trial session was designed and conducted. The Honors student learned to use the software and demonstrated it to a group of Ball State University students in this session. The University's copy of Ventana's GroupSystems was used for this purpose. This thesis contains a review of the literature, a description of

the trial session, and reactions to learning and using the software. Also included are documentation and evaluation of the session.

Review of Literature

Within the past five years, a solution to the pressing need for collaboration support has been developed. Like many other recent advances, this one is also computer based. Many terms are used to identify these systems, such as electronic meeting software(EMS), group decision software, and computer supported collaboration(CSC). These terms describe network software packages that allow users to brainstorm ideas, organize them, and rank or vote on them. All of the data is stored and can be printed or saved for use at a later date. Capabilities such as these carry a substantial cost. The price tag for a complete system including software and hardware can exceed \$100,000(Pollard, 24).

Businesses, government agencies, and other organizations use these systems for strategic planning, product development, and budget evaluations. Educational institutions use them for curriculum development, course design, and long-range planning.

Meetings conducted with these tools can be organized in a variety of ways. Participants can join the meeting from their office terminals and without congregating in a single room or even the same building. If the meeting's goals allow for it, people may make their input at different

times. Depending on the circumstances, different combinations of times and places are possible.

In a traditional meeting, only one person can speak at a time. As a result, one person can dominate. With CSC, everyone can input comments simultaneously and not be silenced by one loquacious individual. Another advantage is that the software permits participation from shy individuals who may be afraid to speak otherwise. Conversely, people who feel comfortable speaking out may be discouraged from participating electronically. Some feel "dismayed with their inability to use their strong verbal skills"(LaPlante, 53). Some simply feel uncomfortable using computers.

Each person's comments are totally anonymous unless participants identify themselves with a name or other code. Total anonymity can be useful when superiors and subordinates participate in the same meeting. The subordinates can feel free to disagree with a superior's idea without fear of retaliation. Ideas are evaluated on their quality alone, not on their source. A disadvantage to this option is that it allows an individual to praise his own comments and make it appear that others are in agreement. It is impossible to tell how many people support one idea without a vote.

Pollard's article reports the results of a study about users' reactions to using the CSC software. Two of these users said the anonymity promoted creativity. They felt comfortable inputting ideas that did not fit the stereotypes of their position.

Other disadvantages of CSC include production of too much information. Ideas and comments can be made quickly. Before long the volume of data can become almost unmanageable if care is not taken.

Different CSC packages offer varied combinations of tools to enhance a meeting. Some packages, such as OptionFinder, consist of a pad that is the size of an ordinary television remote control. The pad records the voting results of meeting room participants. A variety of voting methods can be employed such as yes/no, multiple choice, rank order, and scale. At the other end of the spectrum are packages like Ventana's GroupSystems for Windows. It operates on a local area network(LAN). Users may meet in a central location or participate from remote locations. Tools include outlining, categorizing, brainstorming, voting (with statistical analysis of results), and an agenda that can automatically stop an activity at a specified time.

Software such as Ventana's or the more popular Lotus Notes, is expensive. Recently a new approach to the electronic meeting has become popular with small businesses with limited funds. This approach allows the meeting to be held on the Internet. For a monthly fee, businesses get a website with access to tools similar to those described above. It is much less expensive and does not require an administrator to maintain the LAN or software. The major disadvantage is the inability to send or retrieve accurate data from the web server if malfunctions occur. Popular web

sites providing this service include eRoom, Lotus Instant! Teamroom, and Netscape Virtual Office.

Learning the Software

The next phase of this project involved learning to use Ball State University's copy of Ventana's GroupSystems. This was done by designing a session to demonstrate the capabilities of the software. The design process involved experimenting with the software's tools to produce the desired session format. For example, choices must be made about the tools used for gathering input from participants, which voting method(s) to employ, and the options participants are allowed to have. Several changes were made as different formats were tested.

The learning process was frustrating for three reasons. At the beginning, the software was not operating correctly and it was difficult to get the extremely busy network administrator to fix the problem. Once it was fixed, it worked well and the project proceeded. The computers with the software are available on a very limited basis. For this reason, it was impossible to learn the software using only the manuals. Instruction from the project advisor was helpful in resolving this problem. To fully understand and be comfortable with operating the system, however, it is necessary to conduct actual collaborative meetings.

Over a period of two months, the Honors student learned the system, designed a trial session, and learned the controls at his disposal through the leader station computer.

Conducting the Trial Session

The final phase involved conducting the previously designed session with the help of the project advisor and Dr. Betty Brown's BEOA 461 class. It was conducted by the Honors student on April 7, 1998. The exhibits included with this report contain printouts of the data from the session.

It began with an explanation about the uses, advantages, and disadvantages of the software described in the preceding pages. This was especially necessary since only one of the six participants had ever used the software before. The software is "user friendly" and usually requires only a few minutes for participants to learn how to key and submit information and ideas.

Next, participants were asked to sign in by entering their names and answering three questions in the "People" tool (Exhibit 1). The questions were: 1. What are your major and minor? 2. What are your plans after graduation. 3. List a few words or phrases that come to your mind when you think about a "traditional meeting." One student arrived late and did not participate in this activity.

From this point, the planned agenda was followed. All participants could see it on their computer screens. See Exhibit 2. The first discussion topic and its data are reproduced in Exhibit 3. The name of the tool appears in parenthesis after the instructions. (For example Topic Commenter and Vote) The results and some statistical analyses of the rank voting method appear in Exhibit 4. Finally, Exhibit 5 is data from the other discussion topic. No vote was taken on this item.

Evaluations and Recommendations

As the exhibits reveal, the trial session did not produce good results. Because of a mistaken assumption that graduating students would be familiar with Ball State University's overload policy, an oral explanation was needed before the discussion could begin. Had a more suitable topic been selected, the results would probably have been better. This did, however, prove to be a good learning experience.

Therefore, two recommendations seem appropriate. In order to have a successful meeting, the leader must enlist participants who have knowledge about the topic under discussion and are interested in it. Also, explicit instructions should be given before the participants begin the activity. These participants did not realize the importance of identifying topics first and then placing supporting comments within topics. They simply added new topics for each thought. Perhaps the leader should have identified a few topics for each question. The students did not appear to understand the explanation given as they were typing. Once they begin keying their ideas, they become oblivious to leader instructions. In Exhibit 3, the bold sentences are topics and indented ones are supporting comments.

A Personal Evaluation

Overall, I believe this has been a valuable learning experience for myself and those who participated in the session. If necessary, I would be able to create and run

collaborative meetings using this software to generate ideas, evaluate issues, and react to proposals. Exposure to this type of software is also beneficial for BEOA students.

Exhibit 1**People****WB214 #12 (Chrissy Mansberger)**

1. Business Administrative Information Technology
2. Administrative Assistant Job
3. group of people; going over specific topics to discuss

WB214 #14 (LaKeyshia Barnes)

Office Systems Administration

Some type of pc consultant or troubleshooter.

feedback, concerns, getting things accomplished, agenda

WB214 #15 (Karen Dickey)

1. Office Systems Administration
2. Want executive assistant position, administration
3. lecture, conference room table with everyone gathered around it in a circle, paper handouts

WB214 #21 (Kara)

1. Office Systems Administration
2. I don't know!
3. Formal
There is a leader.
Is located in a professional setting.

WB214 #22 (Jennifer Erner)

1. Office Systems Administration
2. I am not really sure yet.
3. listening to your boss
brainstorming

Exhibit 2

Agenda - Hotmire**4/7/98****5:05 PM****Introduction**

Group Member Introductions

5:15 PM**Should BSU change its overload policy? If so, how? (Topic Commenter)**

In as few words as possible, submit ideas on this topic.

5:35 PM**Vote on recommendations (Vote)****5:50 PM****About which business classes do you have strong feelings - positive or negative (Topic Commenter)**

List class as topic and reasons as comments.

Exhibit 3

Should BSU change its overload policy? If so, how? (Topic Commenter)**1. The university is trying to milk more money out of the students/**

Yes, it is trying to milk us for everything we have. I feel that the overload limit should at least be at 19 credit hours.

I agree. It is ridiculous to have to pay more if you need one more credit to graduate.

2. I think if an individual wants to take extra classes then let them.

3. Personally, I feel that BSU should change its overload policy. I feel that if an individual needs to take extra hours to graduate, then students shouldn't be responsible to pay so much more.

4. Yes-when trying to graduate in four years, you have to take overloads, such as I have, and you shouldn't have to pay, especially if you put in the time and work

5. Yes, I don't think that its not very logical

6. Ball State's current limit for credit hours is about 17.5 hours. I've been here for four years and I've never taken an class that was worth 1/2 of a credit.

Right on girl!

Good Point-Or only 2 credits so your short 1

7. This is not a very good topic for discussion.

You are right. There's not too much you can say about it. I have nothing more to mention.

What topic are we supposed to discuss then?

8. I know that I only need 13 credits to graduate, but I have no chose but to take 15 since I have already taken walking

Exhibit 4

Vote on recommendations (Vote)**Voting Results**

Rank Order (Allow bypass)

Number of ballot items: 8

Total number of voters (N): 6

Rank Sum

40	1. Yes-when trying to graduate in four years, you have to take overloads, such as I have, and you shouldn't have to pay, especially if you put in the time and work
38	2. The university is trying to milk more money out of the students/
38	3. Personally, I feel that BSU should change its overload policy. I feel that if an individual needs to take extra hours to graduate, then students shouldn't be responsible to pay so much more.
30	4. I think if an individual wants to take extra classes then let them.
21	5. This is not a very good topic for discussion.
20	6. Ball State's current limit for credit hours is about 17.5 hours. I've been here for four years and I've never taken an class that was worth 1/2 of a credit.
15	7. Yes, I don't think that its not very logical
14	8. I know that I only need 13 credits to graduate, but I have no chose but to take 15 since I have already taken walking

Number of Votes in Each Rating

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. Yes-when	3	1	0	1	1
2. The unive	1	1	3	1	0
3. Personall	1	2	1	2	0
4. I think i	0	1	1	1	3
5. This is n	1	0	1	0	1
6. Ball Stat	0	1	0	0	1
7. Yes, I do	0	0	0	0	0
8. I know th	0	0	0	1	0
	<u>6</u>	<u>7</u>	<u>8</u>	<u>Mean</u>	<u>STD</u>
1. Yes-when	0	0	0	2.33	1.75
2. The unive	0	0	0	2.67	1.03
3. Personall	0	0	0	2.67	1.21
4. I think i	0	0	0	4.00	1.26
5. This is n	0	0	3	5.50	3.02
6. Ball Stat	1	3	0	5.67	1.97
7. Yes, I do	3	3	0	6.50	0.55

Exhibit 4 (continued)

8. I know th	2	0	3	6.67	1.63
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n

- | | |
|--------------|---|
| 1. Yes-when | 6 |
| 2. The unive | 6 |
| 3. Personall | 6 |
| 4. I think i | 6 |
| 5. This is n | 6 |
| 6. Ball Stat | 6 |
| 7. Yes, I do | 6 |
| 8. I know th | 6 |

Group consensus (1.00 = most consensus): 0.54

Ballot Items in Original Order

1. This is not a very good topic for discussion.

You are right. There's not too much you can say about it. I have nothing more to mention.

What topic are we supposed to discuss then?

2. The university is trying to milk more money out of the students/

Yes, it is trying to milk us for everything we have. I feel that the overload limit should at least be at 19 credit hours.

I agree. It is ridiculous to have to pay more if you need one more credit to graduate.

3. I think if an individual wants to take extra classes then let them.

4. Personally, I feel that BSU should change its overload policy. I feel that if an individual needs to take extra hours to graduate, then students shouldn't be responsible to pay so much more.

5. Yes-when trying to graduate in four years, you have to take overloads, such as I have, and you shouldn't have to pay, especially if you put in the time and work

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Right on girl!

Good Point-Or only 2 credits so your short 1

8. I know that I only need 13 credits to graduate, but I have no chose but to take 15 since I have already taken walking

Exhibit 5

About which business classes do you have strong feelings - positive or negative (Topic Commenter)

1. Fin 350 should be taken away

It was the worst class I have ever taken

It had to be one of the worst classes I've ever taken, besides programming. I hate to say it, but I didn't learn JACK. I can't even remember a topic we discussed in that class. Thank goodness it's over!

2. ECON 201 is a real brain buster!!

3. More classes should be offered in the BEOA Department.

ALL BEOA classes are a joke. Easy A's all the way!

Not all of them!

4. I think that BEOA 255 is a waste of everyone's time.

what are we suppose to be learning in 255 anyway?

I really do not have the slightest idea.

I got an A!

5. Mgt 491 is a monster. Too much information is to be covered in a short amount of time. It's crazy!

I am so worried about that class

6. I was lucky to pass Fin 350

7. con 201

8. Econ 202

9. I am lucky to pass any class!

10. BEOA 461 gets on my nerves

Oh Yeh! Its like a waste of time. And what about that task project? I have not a clue! Why are we using the same book as BEOA 255? That's crazy!

Some one did not do a very good job of setting up these classes.

11. Exactly

12. Finance 350

13. I wouldn't wonder why for 461

14. Right now, I am tired of all classes, but by BEOA are especially nice.

15. BEOA 261 needs to be more of a class

16. Multimedia is too much work in one semester

Exhibit 5 (continued)**17. Has anyone learned ANYTHING in BEOA 461??**

I don't really think so. I am still trying to figure out the task force.

I wonder though if she'll give us all A's for attempting to live through the class

18. May it needs a new prof.

Ok, fine I like the prof, but she needs to teach the class differently.

19. How to be frustrated and its best to find friends in the business**20. oh no the clock is ticking away**

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